

What Is the Role of Carbohydrates in the Management of Diabetes?



THE *NATIONAL DIABETES Statistics Report*¹ estimated that the prevalence of diabetes in 2012 was 29.1 million Americans, or 9.3% of the population. Of the 29.1 million, 21.0 million were diagnosed and 8.1 million were undiagnosed. The total estimated cost of diabetes in 2012 was \$245 billion—\$176 billion for direct medical costs and \$69 billion in reduced productivity. These statistics are expected to increase each year.

Combating diabetes is a serious public health issue and needs the action of all health professionals and individuals to slow this trend. In the fall of 2013, the American Diabetes Association replaced their nutrition therapy recommendations from 2008. The key components for diabetes management from the updated “Nutrition Therapy Recommendations for the Management of Adults with Diabetes”² are incorporating a healthful eating pattern, regular physical activity, and pharmacotherapy. The overall message of the new guideline is that there is no single eating pattern that’s best for everyone with diabetes; therefore, the key to achieving optimal health and nutrition is individualization. Carbohydrate intake has a direct effect on postprandial glucose levels in people with diabetes and is the primary macronutrient of concern in glycemic management. For many individuals with diabetes, the most challenging part of the treatment plan is determining what to eat. One of the most confusing areas in particular is related to carbohydrates: What is the ideal amount of carbohydrates to have and what kind of carbohydrates should I eat?

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The guidelines state that there is insufficient evidence to support a specific amount or percent of calories from carbohydrates for people with diabetes. Despite the inconclusive results of the studies evaluating the effect of differing percentages of carbohydrates in people with diabetes, monitoring carbohydrate amounts is an effective strategy for improving postprandial glucose. The document advises that the patient choose nutrient-dense, high-fiber foods as opposed to processed foods with added sodium, fat, and sugars. The kinds of carbohydrates recommended are vegetables, fruits, whole grains, legumes, and milk.²

With respect to dietary fiber, the research supports a lower incidence of mortality in people with diabetes who consume an adequate intake, but little evidence was found that fiber significantly improved glycemic control. People with diabetes should consume at least the amount of fiber and whole grains recommended for the general public.² There has been controversy about the need to subtract dietary fiber from the total amount of carbohydrates found in a food. Evaluating the research showed no significant improvement in glycemic control unless fiber intake was above 50 g per day. The guidelines state that for most people, it is not necessary to subtract the amount of dietary fiber or sugar alcohols from total carbohydrates when carbohydrate counting.² In addition, for the first time, the guidelines specifically call for the avoidance of sugar-sweetened beverages.

Another area of concern is what is the best eating plan or pattern for a person with diabetes. The recommendation from the American Diabetes Association states that there is not a “one-size-fits-all” eating pattern for individuals with diabetes. In order to be effective, nutrition therapy should be individualized for each patient/client based on his or her individual health goals; personal and cultural preferences; health literacy and numeracy; access to healthful choices; and readiness, willingness, and

ability to change. Nutrition interventions should emphasize a variety of minimally processed nutrient-dense foods in appropriate portion sizes as part of a healthful eating pattern. Also, the individual with diabetes should be provided with practical tools for day-to-day meal planning and behavior change that can be maintained over the long term.² The guideline states that the registered dietitian nutritionist has the expertise to make him- or herself the preferred member of the health care team to provide nutrition therapy for the patient with diabetes. The complete recommendations can be accessed in the November 2013 issue of *Diabetes Care* at <http://care.diabetesjournals.org/content/36/11/3821.full>.

Academy Diabetes Nutrition Resources

The Academy of Nutrition and Dietetics and the American Diabetes Association revised their educational materials. The new materials are located at <https://www.eatright.org/shop/>.

- *Choose Your Foods: Food Lists for Diabetes* (English)
- *Count Your Carbs: Getting Started*
- *Match Your Foods: Plan Your Meals*
- *Eating Healthy with Diabetes: Easy Reading Guide*
- *Healthy Food Choices*
- *Choose Your Foods: Food Lists for Diabetes* (Spanish; Fall 2014)
- *Making Choices: Meal Planning for Diabetes and Stage 3 or 4 Chronic Kidney Disease* (December 2014)

References

1. Centers for Disease Control and Prevention. *National Diabetes Statistics Report: Estimates of Diabetes and Its Burden in the United States, 2014*. Atlanta, GA: US Department of Health and Human Services; 2014. <http://www.cdc.gov/diabetes/pubs/statsreport14.htm?loc=americandiabetesassociation>. Accessed July 28, 2014
2. Evert AB, Boucher JL, Cypress M, et al. Nutrition therapy recommendations for the management of adults with diabetes. *Diabetes Care*. 2013;36(11):3821-3842. <http://care.diabetesjournals.org/content/36/11/3821.full>. Accessed July 28, 2014.